

WHAT IS CLAIMED IS:

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1. A semiconductor laser device comprising:
a first cladding layer, which is made of a nitride semiconductor of a first conductivity type and is formed over a substrate;

an active layer, which is made of another nitride semiconductor and is formed over the first cladding layer; and

a second cladding layer, which is made of still another nitride semiconductor of a second conductivity type and is formed over the active layer,

wherein a spontaneous-emission-absorbing layer, which is made of yet another nitride semiconductor of the first conductivity type and absorbs spontaneous emission that has been radiated from the active layer, is formed between the substrate and the first cladding layer.

2. The device of Claim 1, wherein the spontaneous-emission-absorbing layer contains indium and is formed in contact with the first cladding layer.

3. The device of Claim 1, wherein the spontaneous-emission-absorbing layer contains indium and is formed in contact with the substrate.

4. A semiconductor laser device comprising:

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a first cladding layer, which is made of a nitride semiconductor of a first conductivity type and is formed over a substrate;

an active layer, which is made of another nitride semiconductor and is formed over the first cladding layer;

a second cladding layer, which is made of still another nitride semiconductor of a second conductivity type and is formed over the active layer; and

an electrode formed over the second cladding layer,

wherein a spontaneous-emission-absorbing layer, which is made of yet another nitride semiconductor of the second conductivity type and absorbs spontaneous emission that has been radiated from the active layer, is formed between the second cladding layer and the electrode.

5. The device of Claim 4, wherein the spontaneous-emission-absorbing layer contains indium and is formed in contact with the second cladding layer.

6. The device of Claim 4, wherein the spontaneous-emission-absorbing layer contains indium and is formed in contact with the electrode.

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7. A semiconductor laser device comprising a laser diode body, the laser diode body including: a first cladding layer,

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which is made of a nitride semiconductor of a first conductivity type and is formed over a substrate; an active layer, which is made of another nitride semiconductor and is formed over the first cladding layer; and a second cladding layer, which is made of still another nitride semiconductor of a second conductivity type and is formed over the active layer,

wherein a spontaneous emission protective film for absorbing or reflecting spontaneous emission that has been radiated from the active layer is formed on a surface of the substrate, the surface being opposite to another surface of the substrate over which the active layer is located.

8. The device of Claim 7, wherein the spontaneous emission protective film is made of silicon or a metal containing gold.

9. A semiconductor laser device comprising a laser diode body, the laser diode body including: a first cladding layer, which is made of a nitride semiconductor of a first conductivity type and is formed over a substrate; an active layer, which is made of another nitride semiconductor and is formed over the first cladding layer; and a second cladding layer, which is made of still another nitride semiconductor of a second conductivity type and is formed over the active layer,

wherein spontaneous emission protective films for ab-

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sorbing or reflecting spontaneous emission that has been radiated from the active layer are formed on an emissive end facet of the laser diode body, except for a portion of the active layer from which laser radiation is emitted, and on a reflective end facet of the laser diode body, the reflective end facet facing the emissive end facet.

10. The device of Claim 9, wherein the spontaneous emission protective films are made of silicon or a metal containing gold.

11. A semiconductor laser device comprising a laser diode body, the laser diode body including: a first cladding layer, which is made of a nitride semiconductor of a first conductivity type and is formed over a substrate; an active layer, which is made of another nitride semiconductor and is formed over the first cladding layer; and a second cladding layer, which is made of still another nitride semiconductor of a second conductivity type and is formed over the active layer,

wherein spontaneous emission protective films for absorbing or reflecting spontaneous emission that has been radiated from the active layer are formed on side faces of the laser diode body, the side faces being parallel to a direction in which the laser radiation is emitted.

12. The device of Claim 11, wherein the spontaneous emission protective films are made of silicon or a metal containing gold.

13. A semiconductor laser device comprising:

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a first cladding layer, which is made of a nitride semiconductor of a first conductivity type and is formed over a substrate;

an active layer, which is made of another nitride semiconductor and is formed over the first cladding layer;

a second cladding layer, which is made of still another nitride semiconductor of a second conductivity type and is formed over the active layer; and

an electrode, which is formed over the second cladding layer and injects striped current into the active layer,

wherein a recess is formed in the active layer beside and along a region of the active layer to which the striped current is injected, and

wherein the recess is filled in with a spontaneous-emission-absorbing member for absorbing spontaneous emission that has been radiated from the active layer.

14. The device of Claim 13, wherein the spontaneous-emission-absorbing member is made of silicon or a metal containing gold.

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15. A semiconductor laser device comprising a laser diode body, the laser diode body including: a first cladding layer, which is made of a nitride semiconductor of a first conductivity type and is formed over a substrate; an active layer, which is made of another nitride semiconductor and is formed over the first cladding layer; and a second cladding layer, which is made of still another nitride semiconductor of a second conductivity type and is formed over the active layer,

wherein a spontaneous emission protective member for absorbing or reflecting spontaneous emission that has been radiated from the active layer is formed on or over a surface of the substrate, which is opposite to another surface of the substrate over which the active layer is located, and

wherein another spontaneous emission protective member is formed to be spaced apart from at least one side face of the laser diode body.

16. The device of Claim 15, wherein the substrate is made of sapphire, silicon carbide or gallium nitride.

17. An optical disk apparatus comprising:
a semiconductor laser device;
a condensing optical system for condensing laser radiation that has been emitted from the semiconductor laser device

on a storage medium on which data has been recorded; and
a photodetector for detecting the laser radiation that
has been reflected from the storage medium,

wherein the semiconductor laser device comprises:

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a first cladding layer, which is made of a nitride semi-
conductor of a first conductivity type and is formed over a
substrate;

an active layer, which is made of another nitride semi-
conductor and is formed over the first cladding layer; and

a second cladding layer, which is made of still another
nitride semiconductor of a second conductivity type and is
formed over the active layer,

wherein a spontaneous-emission-absorbing layer, which is
made of yet another nitride semiconductor of the first conduc-
tivity type and absorbs spontaneous emission that has been ra-
diated from the active layer, is formed between the substrate
and the first cladding layer.

18. An optical disk apparatus comprising:

a semiconductor laser device;

a condensing optical system for condensing laser radia-
tion that has been emitted from the semiconductor laser device
on a storage medium on which data has been recorded; and

a photodetector for detecting the laser radiation that
has been reflected from the storage medium,

wherein the semiconductor laser device comprises:

a first cladding layer, which is made of a nitride semiconductor of a first conductivity type and is formed over a substrate;

an active layer, which is made of another nitride semiconductor and is formed over the first cladding layer;

a second cladding layer, which is made of still another nitride semiconductor of a second conductivity type and is formed over the active layer; and

an electrode formed over the second cladding layer,

wherein a ~~spontaneous-emission-absorbing~~ layer, which is made of yet another nitride semiconductor of the second conductivity type and absorbs spontaneous emission that has been radiated from the active layer, is formed between the second cladding layer and the electrode.

19. An optical disk apparatus comprising:

a semiconductor laser device;

a condensing optical system for condensing laser radiation that has been emitted from the semiconductor laser device on a storage medium on which data has been recorded; and

a photodetector for detecting the laser radiation that has been reflected from the storage medium,

wherein the semiconductor laser device comprises a laser diode body, the laser diode body including: a first cladding

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layer, which is made of a nitride semiconductor of a first conductivity type and is formed over a substrate; an active layer, which is made of another nitride semiconductor and is formed over the first cladding layer; and a second cladding layer, which is made of still another nitride semiconductor of a second conductivity type and is formed over the active layer, and

wherein a spontaneous emission protective film for absorbing or reflecting spontaneous emission that has been radiated from the active layer is formed on a surface of the substrate, the surface being opposite to another surface of the substrate over which the active layer is located.

20. An optical disk apparatus comprising:

a semiconductor laser device;

a condensing optical system for condensing laser radiation that has been emitted from the semiconductor laser device on a storage medium on which data has been recorded; and

a photodetector for detecting the laser radiation that has been reflected from the storage medium,

wherein the semiconductor laser device comprises a laser diode body, the laser diode body including: a first cladding layer, which is made of a nitride semiconductor of a first conductivity type and is formed over a substrate; an active layer, which is made of another nitride semiconductor and is

formed over the first cladding layer; and a second cladding layer, which is made of still another nitride semiconductor of a second conductivity type and is formed over the active layer, and

wherein spontaneous emission protective films for absorbing or reflecting spontaneous emission that has been radiated from the active layer are formed on an emissive end facet of the laser diode body, except for a portion of the active layer from which the laser radiation is emitted, and on a reflective end facet of the laser diode body, the reflective end facet facing the emissive end facet.

21. An optical disk apparatus comprising:

a semiconductor laser device;

a condensing optical system for condensing laser radiation that has been emitted from the semiconductor laser device on a storage medium on which data has been recorded; and

a photodetector for detecting the laser radiation that has been reflected from the storage medium,

wherein the semiconductor laser device comprises a laser diode body, the laser diode body including: a first cladding layer, which is made of a nitride semiconductor of a first conductivity type and is formed over a substrate; an active layer, which is made of another nitride semiconductor and is formed over the first cladding layer; and a second cladding

layer, which is made of still another nitride semiconductor of a second conductivity type and is formed over the active layer,

wherein spontaneous emission protective films for absorbing or reflecting spontaneous emission that has been radiated from the active layer are formed on side faces of the laser diode body, the side faces being parallel to a direction in which the laser radiation is emitted.

22. An optical disk apparatus comprising:

a semiconductor laser device;

a condensing optical system for condensing laser radiation that has been emitted from the semiconductor laser device on a storage medium on which data has been recorded; and

a photodetector for detecting the laser radiation that has been reflected from the storage medium,

wherein the semiconductor laser device comprises:

a first cladding layer, which is made of a nitride semiconductor of a first conductivity type and is formed over a substrate;

an active layer, which is made of another nitride semiconductor and is formed over the first cladding layer;

a second cladding layer, which is made of still another nitride semiconductor of a second conductivity type and is formed over the active layer; and

an electrode, which is formed over the second cladding layer and injects striped current into the active layer,

wherein a recess is formed in the active layer beside and along a region of the active layer to which the striped current is injected, and

wherein the recess is filled in with a spontaneous-emission-absorbing member for absorbing spontaneous emission that has been radiated from the active layer.

23. An optical disk apparatus comprising:

a semiconductor laser device;

a condensing optical system for condensing laser radiation that has been emitted from the semiconductor laser device on a storage medium on which data has been recorded; and

a photodetector for detecting the laser radiation that has been reflected from the storage medium,

wherein the semiconductor laser device comprises: a laser diode body, the laser diode body including: a first cladding layer, which is made of a nitride semiconductor of a first conductivity type and is formed over a substrate; an active layer, which is made of another nitride semiconductor and is formed over the first cladding layer; and a second cladding layer, which is made of still another nitride semiconductor of a second conductivity type and is formed over the active layer, and

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wherein a spontaneous emission protective member for absorbing or reflecting spontaneous emission that has been radiated from the active layer is formed on or over a surface of the substrate, which is opposite to another surface of the substrate over which the active layer is located, and

wherein another spontaneous emission protective member is formed to be spaced apart from at least one side face of the laser diode body.

24. An optical integrated unit comprising:

a semiconductor laser device mounted on a support member made of a semiconductor; and

a photodetector, which is formed on the support member and detects a reflected part of laser radiation that has been emitted from the semiconductor laser device,

wherein the semiconductor laser device comprises:

a first cladding layer, which is made of a nitride semiconductor of a first conductivity type and is formed over a substrate;

an active layer, which is made of another nitride semiconductor and is formed over the first cladding layer; and

a second cladding layer, which is made of still another nitride semiconductor of a second conductivity type and is formed over the active layer,

wherein a spontaneous-emission-absorbing layer, which is

made of yet another nitride semiconductor of the first conductivity type and absorbs spontaneous emission that has been radiated from the active layer, is formed between the substrate and the first cladding layer.

25. An optical integrated unit comprising:

a semiconductor laser device mounted on a support member made of a semiconductor; and

a photodetector, which is formed on the support member and detects a reflected part of laser radiation that has been emitted from the semiconductor laser device,

wherein the semiconductor laser device comprises:

a first cladding layer, which is made of a nitride semiconductor of a first conductivity type and is formed over a substrate;

an active layer, which is made of another nitride semiconductor and is formed over the first cladding layer;

a second cladding layer, which is made of still another nitride semiconductor of a second conductivity type and is formed over the active layer; and

an electrode formed over the second cladding layer,

wherein a spontaneous-emission-absorbing layer, which is made of yet another nitride semiconductor of the second conductivity type and absorbs spontaneous emission that has been radiated from the active layer, is formed between the second

cladding layer and the electrode.

26. An optical integrated unit comprising:

a semiconductor laser device mounted on a support member made of a semiconductor; and

a photodetector, which is formed on the support member and detects a reflected part of laser radiation that has been emitted from the semiconductor laser device,

wherein the semiconductor laser device comprises a laser diode body, the laser diode body including: a first cladding layer, which is made of a nitride semiconductor of a first conductivity type and is formed over a substrate; an active layer, which is made of another nitride semiconductor and is formed over the first cladding layer; and a second cladding layer, which is made of still another nitride semiconductor of a second conductivity type and is formed over the active layer, and

wherein a spontaneous emission protective film for absorbing or reflecting spontaneous emission that has been radiated from the active layer is formed on a surface of the substrate, the surface being opposite to another surface of the substrate over which the active layer is located.

27. An optical integrated unit comprising:

a semiconductor laser device mounted on a support member

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made of a semiconductor; and

a photodetector, which is formed on the support member and detects a reflected part of laser radiation that has been emitted from the semiconductor laser device,

wherein the semiconductor laser device comprises a laser diode body, the laser diode body including: a first cladding layer, which is made of a nitride semiconductor of a first conductivity type and is formed over a substrate; an active layer, which is made of another nitride semiconductor and is formed over the first cladding layer; and a second cladding layer, which is made of still another nitride semiconductor of a second conductivity type and is formed over the active layer, and

wherein spontaneous emission protective films for absorbing or reflecting spontaneous emission that has been radiated from the active layer are formed on an emissive end facet of the laser diode body, except for a portion of the active layer from which the laser radiation is emitted, and on a reflective end facet of the laser diode body, the reflective end facet facing the emissive end facet.

28. An optical integrated unit comprising:

a semiconductor laser device mounted on a support member made of a semiconductor; and

a photodetector, which is formed on the support member

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and detects a reflected part of laser radiation that has been emitted from the semiconductor laser device,

wherein the semiconductor laser device comprises a laser diode body, the laser diode body including: a first cladding layer, which is made of a nitride semiconductor of a first conductivity type and is formed over a substrate; an active layer, which is made of another nitride semiconductor and is formed over the first cladding layer; and a second cladding layer, which is made of still another nitride semiconductor of a second conductivity type and is formed over the active layer,

wherein spontaneous emission protective films for absorbing or reflecting spontaneous emission that has been radiated from the active layer are formed on side faces of the laser diode body, the side faces being parallel to a direction in which the laser radiation is emitted.

29. An optical integrated unit comprising:

a semiconductor laser device mounted on a support member made of a semiconductor; and

a photodetector, which is formed on the support member and detects a reflected part of laser radiation that has been emitted from the semiconductor laser device,

wherein the semiconductor laser device comprises:

a first cladding layer, which is made of a nitride semi-

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conductor of a first conductivity type and is formed over a substrate;

an active layer, which is made of another nitride semiconductor and is formed over the first cladding layer;

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a second cladding layer, which is made of still another nitride semiconductor of a second conductivity type and is formed over the active layer; and

an electrode, which is formed over the second cladding layer and injects striped current into the active layer,

wherein a recess is formed in the active layer beside and along a region of the active layer to which the striped current is injected, and

wherein the recess is filled in with a spontaneous-emission-absorbing member for absorbing spontaneous emission that has been radiated from the active layer.

30. An optical integrated unit comprising:

a semiconductor laser device mounted on a support member made of a semiconductor; and

a photodetector, which is formed on the support member and detects a reflected part of laser radiation that has been emitted from the semiconductor laser device,

wherein the semiconductor laser device comprises: a laser diode body, the laser diode body including: a first cladding layer, which is made of a nitride semiconductor of a

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first conductivity type and is formed over a substrate; an active layer, which is made of another nitride semiconductor and is formed over the first cladding layer; and a second cladding layer, which is made of still another nitride semiconductor of a second conductivity type and is formed over the active layer, and

wherein a spontaneous emission protective member for absorbing or reflecting spontaneous emission that has been radiated from the active layer is formed on or over a surface of the substrate, which is opposite to another surface of the substrate over which the active layer is located, and

wherein another spontaneous emission protective member is formed to be spaced apart from at least one side face of the laser diode body.

31. A semiconductor laser device comprising:

a semiconductor laser chip;

a photoelectric transducer for receiving laser radiation that has been emitted from the semiconductor laser chip and detecting a value of optical output power of the semiconductor laser chip; and

a means for blocking at least part of spontaneous emission that has been radiated from the semiconductor laser chip, the blocking means being provided between a portion of the semiconductor laser chip from which the laser radiation is emitted

and a portion of the photoelectric transducer at which the laser radiation is received.

32. The device of Claim 31, wherein the blocking means is provided such that the spontaneous emission attenuates at a ratio higher than the laser radiation while passing through the blocking means.

33. The device of Claim 31, wherein the blocking means is a light-blocking plate with an opening, through which an optical axis of the laser radiation passes.

34. The device of Claim 31, wherein the semiconductor laser chip includes a substrate made of a material transmitting the laser radiation.

35. The device of Claim 34, wherein the semiconductor laser chip is made of nitride semiconductors, and

wherein the substrate is made of sapphire, silicon carbide or gallium nitride.